

REMARKS

Applicants thank the Examiner and his supervisor for the helpful discussion and courtesy shown during the interview held at the U.S. PTO on July 6, 2006.

Claims 1-20 are all the claims pending in the application; claims 7, 8, 11 and 13 have been withdrawn from consideration, claims 1-6, 9, 10, 14-20 are rejected, and claim 12 is objected to.

While the Examiner did not include claims 18 and 20 in the summary of the claims on the Office Action Summary sheet, as these claims depend from rejected claims 2 and 3, it appears that the Examiner intended to include claims 18 and 20 among the rejected claims.

Upon entry of this amendment, claims 1-20 will be canceled, claims 21-37 will be added, and claims 21-37 will be pending.

Support for new claims 21-37 may be found in the specification as follows.

Claim 21 - the method of detecting variations in at least two positions of a glaucoma-related gene is described at page 4, line 5-8; the glaucoma-related gene is described as the MYOC gene of SEQ ID NO:1 at page 4, lines 9-12; the specific variations in SEQ ID NO:1 that may be detected are described at page 8, lines 2-9.

Claim 22 - the specific variations at positions 4037 and 4346 are described at page 22, lines 3-5. See also page 4, lines 15-23, and at page 8, lines 2-9.

Claims 23-24 - the specific variations at positions 194, 199, 324, 1051, 1084, 1627, 1685, 1756, 1853, 2830 and 3371 (in conjunctions with positions 4037 and 4346 of claim 22) are described at page 8, line 23, through page 9, line 2.

Claim 25 - the specific variations at positions 194, 1084 and 1627 are described at page 22, lines 14-19. See also page 4, lines 15-23, and at page 8, lines 2-9.

Claims 26-28 - the specific variations at positions 4037 and 4346 are described at page 22, lines 3-5. See also page 4, lines 15-23, and at page 8, lines 2-9.

Claim 29 - the selection of variations as between substitutions, insertions and deletions is described at page 4, lines 13-14, and at page 8, lines 2-5.

Claim 30 - the specific substitution is described at page 8, lines 16-17.

Claim 31 - the specific substitution is described at page 8, lines 17-18.

Claims 32-33 - the specific substitutions are described at page 8, lines 10-18.

Claim 34 - the detection of a third variation is described at page 10, lines 10-14.

Claim 35 - the types of glaucoma are described at page 5, lines 19-20.

Claim 36 - the use of a hybridizing oligonucleotide is described at page 5, lines 21-24.

Claim 37 - the manner in which the detecting is performed is described at page 5, line 25 through page 6, line 18; page 11, lines 5-11; page 12, line 24 through page 14, line 9.

The location in SEQ ID NO:1 to which the primers recited in claim 37 correspond is shown in the Appendix filed herewith.

No new matter has been added. Entry of the Amendment is respectfully requested.

I. Formal Matters

As the Examiner has not yet acknowledged receipt of the certified copy of the priority document or Applicants' claim to foreign priority, Applicants respectfully request the Examiner to acknowledge receipt of the document and Applicants' claim in the next paper issued by the U.S. PTO.

II. Claim Objections

At page 3 of the Office Action, claim 12 is objected to for improperly depending from two different claims.

The instant Amendment includes the cancellation of claim 12, thus making this objection moot. None of the new claims included in the instant Amendment include an improper dependency of the type noted by the Examiner in claim 12.

In view of the cancellation of claim 12, Applicants respectfully request reconsideration and withdrawal of this objection.

III. Claim Rejections - 35 U.S.C. §101

At page 3 of the Office Action, claims 1-6, 9, 14-17 and 19 are rejected as being drawn to non-statutory subject matter under 35 U.S.C. §101.

The Examiner states that because the cited claims do not recite either a physical transformation of matter or a practical application, the claims are not directed to statutory subject matter.

The instant Amendment includes the cancellation of each of the rejected claims, thus making this rejection moot. Each of new claims 21-37 recites a method for determining a risk of glaucoma in a subject, and are thus directed to statutory subject matter.

In view of the cancellation of claim 1-6, 9, 14-17 and 19, Applicants respectfully request reconsideration and withdrawal of this rejection.

IV. Claim Rejections - 35 U.S.C. §102

A. At page 4 of the Office Action, claims 1, 4, 9 and 10 are rejected under 35 U.S.C. §102(e) as being anticipated by Sarfarazi et al. (US 2004/0191798, Dec. 24, 2001).

Briefly, the Examiner states that Sarfarazi teaches methods of detection, prognosis and diagnosis of the presence or absence of optineurin-associated glaucoma or of an optineurin-associated increased risk of glaucoma through the detection of sequence alterations in the optineurin gene.

The instant Amendment includes the cancellation of each of the rejected claims, thus making this rejection moot. In view of the cancellation of claim 1, 4, 9 and 10, Applicants respectfully request reconsideration and withdrawal of this rejection.

Applicants note that each of new claims 21-37 recites a method for determining a risk of glaucoma in a subject by detecting variations in the polynucleotide sequence set forth in SEQ ID NO:1. The polynucleotide of SEQ ID NO:1 encodes the myocilin gene. In contrast, Sarfarazi teaches methods that utilize the gene encoding optineurin (see, e.g., paragraph [0005]), a

completely different gene. As such, Sarfarazi does not teach each and every element of new claims 21-37, and should not be considered to anticipate new claims 21-37.

B. At page 5 of the Office Action, claims 1, 2, 4, 9 and 10 are rejected under 35 U.S.C. §102(e) as being anticipated by Stone et al. (US Patent No. 6,956,103).

Briefly, the Examiner states that Stone teaches methods for detecting mutations in genes that correlate with the existence or predisposition to the development of glaucoma, including detecting the presence or absence of genetic alternations of genes encoding myocilin.

The instant Amendment includes the cancellation of each of the rejected claims, thus making this rejection moot. In view of the cancellation of claim 1, 4, 9 and 10, Applicants respectfully request reconsideration and withdrawal of this rejection.

Each of new claims 21-37 recites a method for determining a risk of glaucoma in a subject by detecting variations in the polynucleotide sequence set forth in SEQ ID NO:1. The locations of the variations are recited in the new claims. Stone does not teach a method for determining a risk of glaucoma by detecting any of the variations recited in new claims 21-37.

Applicants enclosed an Appendix herewith that shows the location of the variations recited in new claims 21-37, and those that are disclosed in Stone. Each of the variations recited in new claims 21-37 is marked with the letter “A”. Each of the variations of Stone is marked with the letter “D”. Stone does not teach any of the variations recited in new claims 21-37. As such, Stone does not teach each and every element of new claims 21-37, and should not be considered to anticipate new claims 21-37.

V. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

AMENDMENT UNDER 37 C.F.R. §1.111
U.S. Appln. No. 10/509,595

Q83447

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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WASHINGTON OFFICE

23373

CUSTOMER NUMBER

Date: August 17, 2006

APPENDIX



Alignment
Page 1 of 8

10/509,595

Sequence 1: US2005/0170353 (SEQ ID NO:1) 6000 bp
Sequence 2: USP6956103 (SEQ ID NO:1) 2800 bp

Note:

- "A" indicates the positions of a variation defined in the amended claims.
- "B" indicates the starting or ending point of the sequence overlapping.
- "C" indicates the starting or ending point of Exon 1.
- "D" indicates the location of the frame encoding the amino acid where an amino acid mutation could be detected. Mutations are disclosed in figure 3 of US 6956103 (Stone et al). The numbers in parentheses indicate the locations in SEQ ID NO: 1 of US 6956103.
- "*" means that the nucleotides of the sequences are the same.
- "-" means that there is no nucleotide to be aligned.

US2005/0170353	-----	SEQ ID NO: 2	-----
USP6956103	GCTCCACAGGAAGTCTCCCACTCTAGACTTCTGCATCACGATGTTACAGCCAGAAGCTC		
US2005/0170353	-----		
USP6956103	CGTGAGGGTGAGGGTCTGTGTCTTACACCTACCTGTATGCTCTACACCTGAGCTCACTGC		
US2005/0170353	-----		
USP6956103	AACCTCTGCCTCCCAGGTTCAAGCAATTCTCCTGTCTCAGCCTCCCGCGTAGCTGGGACT		
US2005/0170353	-----		
USP6956103	ACAGGCGCACGCCGGCTAATTTTTGTATTGTTAGTAGAGATGGGGTTTCACCATATTAG		
US2005/0170353	-----		
USP6956103	CCCGGCTGGTCTTGAACCTCTGACCTCAGGTGATCCACCCACCTCAGCCTCCTAAAGTGC		
US2005/0170353	-----		
USP6956103	TGGGATTACAGGCATGAGTCAACCGCGCCGCAAGGGTCAGTGTTTAATAAGGAATAAC		
US2005/0170353	-----		
USP6956103	TTGAATGGTTTACTAAACCAACAGGGAAACAGACAAAAGCTGTGATAATTTACAGGGATTC		
US2005/0170353	-----		
USP6956103	TTGGGATGGGGAATGGTGCCATGAGCTGCCTGCCTAGTCCCAGACCACTGGTCCTCATCA		
US2005/0170353	-----		
USP6956103	CTTTCTTCCCTCATCCTCATTTTCAGGCTAAGTTACCATTTTATTACCATGCTTTTGTG		
US2005/0170353	-----		
USP6956103	GTAAGCCTCCACATCGTTACTGAAATAAGAGTATACATAAACTAGTTCCATTGTTGGGCCA		

US2005/0170353 USP6956103	TCTGTGTGTGTGTATAGGGGAGGAGGGCATACCCAGAGACTCCTTGAAGCCCCCGGCAG -----
US2005/0170353 USP6956103	AGGTTTCCTCTCCAGCTGGGGGAGCCCTGCAAGCACCCGGGGTCCTGGGTGTCTTGAGCA -----
US2005/0170353 USP6956103	ACCTGCCAGCCCGTGCCACTGGTTGTTTTGTTATCACTCTCTAGGGACCTGTTGCTTTCT -----
US2005/0170353 USP6956103	ATTTCTGTGTGACTCGTTCATTCATCCAGGCATTGACAATTTATTGAGTACTTATA -----
US2005/0170353 USP6956103	TCTGCCAGACACCAGAGACAAAATGGTGAGCAAAGCAGTCACTGCCCTACCTTCGTGGAG -----
US2005/0170353 USP6956103	GTGACAGTTTCTCATGGAAGACGTGCAGAAGAAAATTAATAGCCAGCCAACTTAAACCCA -----
US2005/0170353 USP6956103	GTGCTGAAAGAAAGGAAATAAACACCATCTTGAAGAATTGTGCGCAGCATCCCTTAACAA -----
US2005/0170353 USP6956103	GGCCACCTCCCTAGCGCCCCCTGCTGCCTC ¹⁰⁵¹ _A ATCGTGCCCGGAGGCCCCCAAGCCCCGAGT -----
US2005/0170353 USP6956103	CTT ¹⁰⁸⁴ _A CAAGCCTCCTCCTCCATCAGTCACAGCGCTGCAGCTGGCCTGCCTCGCTTCCCGTG -----
US2005/0170353 USP6956103	AATCGTCCTGGTGCATCTGAGCTGGAGACTCCTTGGCTCCAGGCTCCAGAAAGGAAATGG -----
US2005/0170353 USP6956103	AGAGGGAAACTAGTCTAACGGAGAATCTGGAGGGGACAGTGTTTCCTCAGAGGGAAAGGG -----
US2005/0170353 USP6956103	GCCTCCACGTCCAGGAGAAATCCAGGAGGTGGGGACTGCAGGGAGTGGGGACGCTGGGGC -----
US2005/0170353 USP6956103	TGAGCGGGTGCTGAAAGGCAGGAAGGTGAAAAGGGCAAGGCTGAAGCTGCCCAGATGTTT -----
US2005/0170353 USP6956103	AGTGTGTTTACGGGGCTGGGAGTTTTCCGTTGCTTCCTGTGAGCCTTTTTATCTTTTCT -----
US2005/0170353 USP6956103	CTGCTTGGAGGAGAAGAAGTCTATTTTCATGAAGGGATGCAGTTTCATAAAGTCAGCTGTT -----

SEQ ID NO: 24

US2005/0170353 AAAATTCCAGGGTGTGCATGGGTTTTCCTTCACGAAGGCCTTTATTTAATGGGAATATAG
USP6956103 -----

US2005/0170353 GAAGCGAGCTCATTTCTAGGCCGTTAATTCACGGAAGAAGTGAAGTGGAGTCTTTTCTTT
USP6956103 -----

1627

A

US2005/0170353 CATGTCCTTCTGGGCAACTACTCAGCCCTGTGGTGGACTTGGCTTATGCAAGACGGTCGAA
USP6956103 -----

1685

A

US2005/0170353 AACCTTGGGAATCAGGAGACTCGGTTTTCTTTCTGGTCTGCCATTGGTTGGCTGTGCGAC
USP6956103 -----

1756

A

SEQ ID NO: 8

US2005/0170353 CGTGGGCAAGTGTCTCTCCTTCCCTGGGCCATAGTCTTCTCTGCTATAAAGACCCTTGCA
USP6956103 -----

1853

A

SEQ ID NO: 8

US2005/0170353 GCTCTCGTGTCTGTGAACACTTCCCTGTGATTCTCTGTGAGGGGGGATGTTGAGAGGGG
USP6956103 -----

US2005/0170353 AAGGAGGCAGAGCTGGAGCAGCTGAGCCACAGGGGAGGTGGAGGGGGACAGGAAGGCAGG
USP6956103 -----

SEQ ID NO: 23

US2005/0170353 CAGAAGCTGGGTGCTCCATCAGTCCTCACTGATCACGTCAGACTCCAGGACCGAGAGCCA
USP6956103 -----

US2005/0170353 CAATGCTTCAGGAAAGCTCAATGAACCCAACAGCCACATTTTCCTTCCCTAAGCATAGAC
USP6956103 -----

US2005/0170353 AATGGCATTGCGCAATAACCAAAAAGAATGCAGAGACTAACTGGTGGTAGCTTTTGCCTG
USP6956103 -----

SEQ ID NO: 9

US2005/0170353 GCATTCAAAAACGGGCCAGAGCAAGTGGAAAATGCCAGAGATTGTTAAACTTTTCACCC
USP6956103 -----

2216

B

SEQ ID NO: 9

US2005/0170353 TGACCAGCACCCACGCAGCTCAGCAGTGACTGCTGACAGCACGGAGTGACCTGCGAGCGC
USP6956103 -----

AGCGC

SEQ ID NO: 22

US2005/0170353 AGGGGAGGAGAAGAAAAAGAGAGGGATAGTGATGAGCAAGAAAGACAGATTTCATTCAAG
USP6956103 AGGGGAGGAGAAGAAAA-GAGAGGGATAGTGATGAGCAAGAAAGACAGATTTCATTCAAG

US2005/0170353 GGCAGTGGGAATTGACCACAGGGATTATAGTCCACGTGATCCTGGGTTCTAGGAGGCAGG
USP6956103 GGCAGTGGGAATTGACCACAGGGATTATAGTCCACGTGATCCTGGGTTCTAGGAGGCAGG

US2005/0170353 USP6956103	GCTATATTGTGGGGGAAAAAATCAGTTCAAGGGAAGTCGGGAGACCTGATTCTAATAC GCTATATTGTGGGGGAAAAAATCAGTTCAAGGGAAGTCGGGAGACCTGATTCTAATAC *****
US2005/0170353 USP6956103	TATATTTTTCCTTTACAAGCTGAGTAATTCTGAGCAAGTCACAAGGTAGTAAC TGAGGCT TATATTTTTCCTTTACAAGCTGAGTAATTCTGAGCAAGTCACAAGGTAGTAAC TGAGGCT *****
US2005/0170353 USP6956103	<div style="text-align: right;">SEQ ID NO: 10</div> GTAAGATTACTTAGTTTCTCCTTATTAGGAAC TCTTTTCTCTGTGGAGTTAGCAGCACA GTAAGATTACTTAGTTTCTCCTTATTAGGAAC TCTTTTCTCTGTGGAGTTAGCAGCACA *****
US2005/0170353 USP6956103	<div style="text-align: right;">SEQ ID NO: 21</div> AGGGCAATCCCGTTTCTTTTAACAGGAAGAAAACATTCC TAAGAGTAAAGCCAAACAGAT AGGGCAATCCCGTTTCTTTTAACAGGAAGAAAACATTCC TAAGAGTAAAGCCAAACAGAT *****
US2005/0170353 USP6956103	<div style="text-align: right;">SEQ ID NO: 21</div> TCAAGCCTAGGTCTTGCTGACTATATGATTGGTTTTTTTGAAAAATCATTT CAGCGATGTT TCAAGCCTAGGTCTTGCTGACTATATGATTGGTTTTTTTGAAAAATCATTT CAGCGATGTT *****
US2005/0170353 USP6956103	TACTATCTGATT CAGAAAATGAGACTAGTACCCTTTGGTCAGCTGTAAACAAACACCCAT TACTATCTGATT CAGAAAATGAGACTAGTACCCTTTGGTCAGCTGTAAACAAACACCCAT *****
US2005/0170353 USP6956103	TTGTAAATGTCTCAAGTTCAGGCTTAACTGCAGAACCAATCAAATAAGAATAGAATCTTT TTGTAAATGTCTCAAGTTCAGGCTTAACTGCAGAACCAATCAAATAAGAATAGAATCTTT *****
US2005/0170353 USP6956103	AGAGCAAAC TGTGTTTCTCCACTCTGGAGGTGAGTCTGCCAGGGCAGTTTGGAATATTT AGAGCAAAC TGTGTTTCTCCACTCTGGAGGTGAGTCTGCCAGGGCAGTTTGGAATATTT *****
US2005/0170353 USP6956103	<div style="text-align: center;">2830</div> <div style="text-align: center;">A</div> <div style="text-align: right;">SEQ ID NO: 11</div> ACTTCACAACTATTGACACTGTTGTTGGTATTAACAACATAAAGTTGCTCAAAGGCAATC ACTTCACAACTATTGACACTGTTGTTGGTATTAACAACATAAAGTTGCTCAAAGGCAATC *****
US2005/0170353 USP6956103	<div style="text-align: right;">SEQ ID NO: 20</div> ATTATTTCAAGTGGCTTAAAGTTACTTCTGACAGTTTGGTATATTTATTGGCTATTGCC ATTATTTCAAGTGGCTTAAAGTTACTTCTGACAGTTTGGTATATTTATTGGCTATTGCC *****
US2005/0170353 USP6956103	<div style="text-align: right;">SEQ ID NO: 20</div> ATTTGCTTTTGTGTTTTCTCTTTGGGTTTATTAATGTAAAGCAGGGATTATTAACCTAC ATTTGCTTTTGTGTTTTCTCTTTGGGTTTATTAATGTAAAGCAGGGATTATTAACCTAC *****
US2005/0170353 USP6956103	AGTCCAGAAAGCCTGTGAATTTGAATGAGGAAAAAATTACATTTTGTGTTTTTACCACCTT AGTCCAGAAAGCCTGTGAATTTGAATGAGGAAAAAATTACATTTTGTGTTTTTACCACCTT *****
US2005/0170353 USP6956103	CTAACTAAATTTAACATTTTATTCATTGCGAATAGAGCCATAAACTCAAAGTGCGTAATA CTAACTAAATTTAACATTTTATTCATTGCGAATAGAGCCATAAACTCAAAGTGCGTAATA *****
US2005/0170353 USP6956103	ACAGTACCTGTGATTTTGTCAATTACCAATAGAAAATCACAGACATTTTATACTATATTACA ACAGTACCTGTGATTTTGTCAATTACCAATAGAAAATCACAGACATTTTATACTATATTACA *****

US2005/0170353
USP6956103

SEQ ID NO: 19
TAATCATATTTTATTATCATTGTTTCCTTTGTAATCTATATTTTATATATTTGAAAACA
TAATCATATTTTATTATCATTGTTTCCTTTGTAATCTATATTTTATATATTTGAAAACA

US2005/0170353 AGTAAGAAGCTGATTTAGAGGCTAACATTGACATTGGTGCCTGAGATGCAAGACTGAAATT
USP6956103 AGTAAGAAGCTGATTTAGAGGCTAACATTGACATTGGTGCCTGAGATGCAAGACTGAAATT

US2005/0170353 AGAAAGTTCTCCCAAAGATACACAGTTGTTTTAAAGCTAGGGGTGAGGGGGGAAATCTGC
USP6956103 AGAAAGTTCTCCCAAAGATACACAGTTGTTTTAAAGCTAGGGGTGAGGGGGGAAATCTGC

US2005/0170353 CGCTTCTATAGGAATGCTCTCCCTGGAGCCTGGTAGGGTGCTGTCCTTGTGTTCTGGCTG
USP6956103 CGCTTCTATAGGAATGCTCTCCCTGGAGCCTGGTAGGGTGCTGTCCTTGTGTTCTGGCTG

	SEQ ID NO: 13
US2005/0170353	GCTGTTATTTTTCTCTGTCCCTGCTACGTCTTAAAGGACTTGTTTGGATCTCCAGTTCCT
USP6956103	GCTGTTATTTTTCTCTGTCCCTGCTACGTCTTAAAGGACTTGTTTGGATCTCCAGTTCCT

US2005/0170353 AGCATAGTGCCTGGCACAGTGCAGGTTCTCAATGAGTTTGCAGAGTGAATGGAAATATAA
USP6956103 AGCATAGTGCCTGGCACAGTGCAGGTTCTCAATGAGTTTGCAGAGTGAATGGAAATATAA

US2005/0170353 ACTAGAAATATATCCTTGTTGAAATCAGCACACCAGTAGTCTCGGTGTAAGTGTGTGTAC
USP6956103 ACTAGAAATATATCCTTGTTGAAATCAGCACACCAGTAGTCTCGGTGTAAGTGTGTGTAC

[illegible]

US2005/0170353 GGGTATGGGTGCATAAATTGGGATGTTCTTTTTAAAAAGAAACTCCAAACAGACTTCTGG
USP6956103 GGGTATGGGTGCATAAATTGGGATGTTCTTTTTAAAAAGAAACTCCAAACAGACTTCTGG

US2005/0170353 AAGGTTATTTTCTAAGAATCTTGCTGGCAGCGTGAAGGCAACCCCCCTGTGCACAGCCCC
USP6956103 AAGGTTATTTTCTAAGAATCTTGCTGGCAGCGTGAAGGCAACCCCCCTGTGCACAGCCCC

US2005/0170353 ACCCAGCCTCACGTGGCCACCTCTGTCTTCCCCATGAAGGGCTGGCTCCCCAGTATATA
USP6956103 ACCCAGCCTCACGTGGCCACCTCTGTCTTCCCCATGAAGGGCTGGCTCCCCAGTATATA

4037

SEQ ID NO: 17

A

US2005/0170353 TAAACCTCTCTGGAGCTCGGGCATGAGCCAGCAAGGCCACCCATCCAGGCACCTCTCAGC
USP6956103 TAAACCTCTCTGGAGCTCGGGCATGAGCCAGCAAGGCCACCCATCCAGGCACCTCTCAGC

4120

C

US2005/0170353 ACAGCAGAGCTTTCCAGAGGAAGCCTCACCAAGCCTCTGCAATGAGGTTCTTCTGTGCAC
USP6956103 ACAGCAGAGCTTTCCAGAGGAAGCCTCACCAAGCCTCTGCAATGAGGTTCTTCTGTGCAC

(Beginning of Exon 1)

D(1960-1962)

US2005/0170353 GTTGCTGCAGCTTTGGGCCTGAGATGCCAGCTGTCCAGCTGTGCTTCTGGCCTGCCTGG
USP6956103 GTTGCTGCAGCTTTGGGCCTGAGATGCCAGCTGTGCTGCTGCTTCTGGCCTGCCTGG

US2005/0170353 TGTGGGATGTGGGGGCCAGGACAGCTCAGCTCAGGAAGGCCAATGACCAGAGTGGCCGAT
USP6956103 TGTGGGATGTGGGGGCCAGGACAGCTCAGCTCAGGAAGGCCAATGACCAGAGTGGCCGAT

US2005/0170353 GCCAGTATACCTTCAGTGTGGCCAGTCCCAATGAATCCAGCTGCCCAGAGCAGAGCCAGG
USP6956103 GCCAGTATACCTTCAGTGTGGCCAGTCCCAATGAATCCAGCTGCCCAGAGCAGAGCCAGG

4346

SEQ ID NO: 16

A

D(2149-2151)

US2005/0170353 CCATGTCTAGTCATCCATAACTTACAGAGAGACAGCAGCACCCAAACGCTTAGACCTGGAGG
USP6956103 CCATGTCTAGTCATCCATAACTTACAGAGAGACAGCAGCACCCAAACGCTTAGACCTGGAGG

US2005/0170353 CCACCAAAGCTCGACTCAGCTCCCTGGAGAGCCTCCTCCACCAATTGACCTTGGACCAGG
USP6956103 CCACCAAAGCTCGACTCAGCTCCCTGGAGAGCCTCCTCCACCAATTGACCTTGGACCAGG

US2005/0170353 CTGCCAGGCCCCAGGAGACCCAGGAGGGGCTGCAGAGGGAGCTGGGCACCCTGAGGCGGG
USP6956103 CTGCCAGGCCCCAGGAGACCCAGGAGGGGCTGCAGAGGGAGCTGGGCACCCTGAGGCGGG

US2005/0170353 AGCGGGACCAGCTGGAACCCAAACCAGAGAGTTGGAGACTGCCTACAGCAACCTCCTCC
USP6956103 AGCGGGACCAGCTGGAACCCAAACCAGAGAGTTGGAGACTGCCTACAGCAACCTCCTCC

US2005/0170353 GAGACAAGTCAGTTCTGGAGGAAGAGAAGAAGCGACTAAGGCAAGAAAATGAGAATCTGG
USP6956103 GAGACAAGTCAGTTCTGGAGGAAGAGAAGAAGCGACTAAGGCAAGAAAATGAGAATCTGG

US2005/0170353 CCAGGAGGTTGGAAGCAGCAGCCAGGAGGTAGCAAGGCTGAGAAGGGGCCAGTGTCCCC
USP6956103 CCAGGAGGTTGGAAGCAGCAGCCAGGAGGTAGCAAGGCTGAGAAGGGGCCAGTGTCCCC

SEQ ID NO: 15

C

US2005/0170353 AGACCCGAGACACTGCTCGGGCTGTGCCACCAGGCTCCAGAGAAAGGTAAGAATGCAGAGT
USP6956103 AGACCCGAGACACTGCTCGGGCTGTGCCACCAGGCTCCAGAGAAAGGTAAGAATGCAGAGT

(End of Exon 1)

US2005/0170353 GGGGGGACTCTGAGTTCAGCAGGTGATATGGCTCGTAGTGACCTGCTACAGGCGCTCCAG
USP6956103 GGGGGGACTCTGAGTTCAGCAGGTGATATGGCTCGTAGTGACCTGCTACAGGCGCTCCAG

US2005/0170353 USP6956103	GCCTCCCTGCCTGCCCTTTCTCCTAGAGACTGCACAGCTAGCACAAAGACAGATGAATTAA GCCTCCCTGCCTGCCCTTTCTCCTAGAGACTGCACAGCTAGCACAAAGACAGATGAATTAA *****
US2005/0170353 USP6956103	GGAAAGCACAGCGATCACCTTCAAGTATTACTAGTAATTTAGCTCCTGAGAGCTTCATTT GGAAAGCACAGCGATCACCTTCAAGTATTACTAGTAATTTAGCTCCTGAGAGCTTCATTT *****
US2005/0170353 USP6956103	AGATTAGTGGTTCAGAGTTCCTGTGCCCTCCATGTCAGTTTTCACAGTCCATAGCAAAA AGATTAGTGGTTCAGAGTTCCTGTGCCCTCCATGTCAGTTTTCACAGTCCATAGCAAAA *****
US2005/0170353 USP6956103	GGAGAAATAAAAGGACCGGGTGAGATGTGTCTGCA ^B ATGAGCAGTAGAAAGTTGTCAATT GGAGAAATAAAAGGACCGGGTGAGATGTGTCTGCA ^B ----- *****
US2005/0170353 USP6956103	GTCCCTTTTGAAAACTATCCTTTTTTGAACCTTTGCTCAGATTGTTATTTGTACCTTTT -----
US2005/0170353 USP6956103	GATGTTAAAAATGACCTTTATTTATGAAATTACAATAGATTGGGAAATGATAATAAGTGG -----
US2005/0170353 USP6956103	TAAGTTTTTGTATTATTTTAAATGTTCTTCCCTGGCAAAATAAAGAGATGGCACCTCTCT -----
US2005/0170353 USP6956103	GTCAGTTTTCTTAATATGTTGTTCTGAAAGTTTTCTTACTCAGTCCAATCTGAGAACCTC -----
US2005/0170353 USP6956103	TGCTTTTAAGTCATCAGACAAATCTTGAGATGGCTTTTTCTGAGAGGCTCTTCTGTTCA -----
US2005/0170353 USP6956103	TCCTGGTCCCTTCTTGCCATAAGGTGAGTCTGTGTGTGTGTGGGGGGGTGCGGGGGTGA -----
US2005/0170353 USP6956103	GGTGTGGGGGAGGTCTTCTTATTAGCTGGGAAGATGGTATTTGTGTCACTTTTTGTGAA -----
US2005/0170353 USP6956103	AGTGGGCTCCCAAATATCCCTGTTGAGGAAGTGTCTAATCATGAGGAAATAAGCAAGC -----
US2005/0170353 USP6956103	AAATCCAGTTGTTGGACAATTAGTTTGGACTGGTCAAAGATGTCAGTGCCAAGGAAGAAA -----
US2005/0170353 USP6956103	GAAAAAAGGGGTGGGAAGGGCTTGTCTATATTAAAGAGACTAAAGAAATGTGTTAACC -----
US2005/0170353 USP6956103	AAATGTAGTGCATGAGTCTTGATTGGTGTCTTCATCCAAGGGGAAAAAGGCTATGAGGA -----

US2005/0170353	ACAGGTTTGGGATAACTGAGGCAATTTGACTGCTCATTATTATGTTACTGTATTAATGTT
USP6956103	-----
US2005/0170353	CAGTTTCTTGGTGAGATAATGATACTGTGGTTGCGAAGGATAAAATCTTTGTTCTATGGA
USP6956103	-----
US2005/0170353	GATACATGCTTAAGTACCCAGGGTGAGGCGTCAGGATGTCTGCAATTTGCTCTCAAATGG
USP6956103	-----
US2005/0170353	TTGAAGAAAGACTGCAAATATATAGATAATGAGAGAAAGAAAGGTAAACAACCTGTGGCA
USP6956103	-----
US2005/0170353	AAATATTAATAACTGGTGAATTACAACTGGTGAATCTAAGTATATGGGGAGCTTATTGT
USP6956103	-----
US2005/0170353	AC
USP6956103	--

SEQ ID NO: 3

